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*AI*

What Is Claimed:

1      Klein      1. An electrical machine comprising:  
2                  a stator core having slots;  
3                  a set of windings disposed within said slots,  
4                  said set of windings having  $2N+1$  phases where  $N$  is an  
5                  integer greater than 1.

1      K      2. An electrical machine as recited in claim 1      *Show*  
2                  wherein said set of windings is coupled to a common node.

1      Au      3. An electrical machine as recited in claim 1      *D*  
2                  wherein said set of windings is coupled polygonally.

1      K      4. An electrical machine as recited in claim 1  
2                  further comprising a switching circuit coupled to said set  
3                  of windings, said switching circuit comprising at least  
4                   $2(2N+1)$  switching elements.      *) ?*

1      K      5. An electrical machine as recited in claim 4  
2                  further comprising a full wave rectifier.

1      A      6. An electrical machine as recited in claim 1      *Y*  
2                  wherein  $N=2$ .

1      K      7. An electrical machine as recited in claim 1      *n*  
2                  wherein  $N=3$ .

1      K      8. An electrical machine as recited in claim 1  
2                  wherein said electrical machine comprises a generator.

1      K      9. An electrical machine as recited in claim 1  
2                  wherein said set of windings has a full pitch.

1           K 10. An electrical machine as recited in claim 1  
2 wherein said set of windings has a fractional pitch.

1           K 11. An alternator for an automotive vehicle  
2 comprising:  
3            a housing;  
4            a rotor rotatably disposed within said housing;  
5            a stator core disposed within said housing  
6 adjacent to said rotor, said stator core having slots; and  
7            a set of windings disposed within said slots,  
8 said set of windings having  $2N+1$  phases where N is an  
9 integer greater than 1.

1           12. An alternator as recited in claim 11  
2 further comprising a full wave rectifier.

1           13. An alternator as recited in claim 11  
2 wherein said set of windings is coupled to a common node.

1           A 14. An alternator as recited in claim 11  
2 wherein said set of windings is coupled schematically in a  
3 polygon.

1           15. An alternator as recited in claim 14  
2 wherein said polygon has  $2N+1$  sides.

1           16. An alternator as recited in claim 11  
2 further comprising a rectifier circuit coupled to said  
3 first set of windings, said rectifier circuit comprising  
4 at least  $2(2N+1)$  rectifying elements.

1           A 17. An alternator as recited in claim 11  
2 wherein  $N=2$ .

1           ✓18. An alternator as recited in claim 11  
2 wherein N=3. ✓

1           19. An alternator for an automotive vehicle  
2 comprising:  
3           ✓a housing;  
4           ✓a rotor rotatably disposed within said housing;  
5           ✓a stator core disposed within said housing  
6 adjacent to said rotor, said stator core having slots;  
7           ✓a set of windings disposed within said slots,  
8 said set of windings having  $2N+1$  phases where N is an  
9 integer greater than 1; and  
10          ✓a full wave rectifier circuit coupled to said  
11 set of windings, said rectifier circuit comprising at  
12 least  $2(2N+1)$  rectifying elements.

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1           20. An alternator as recited in claim 19  
2 wherein said set of windings is coupled to a common node.

1           21. An alternator as recited in claim 19  
2 wherein said set of windings is coupled schematically in a  
3 polygon.

19 (C)